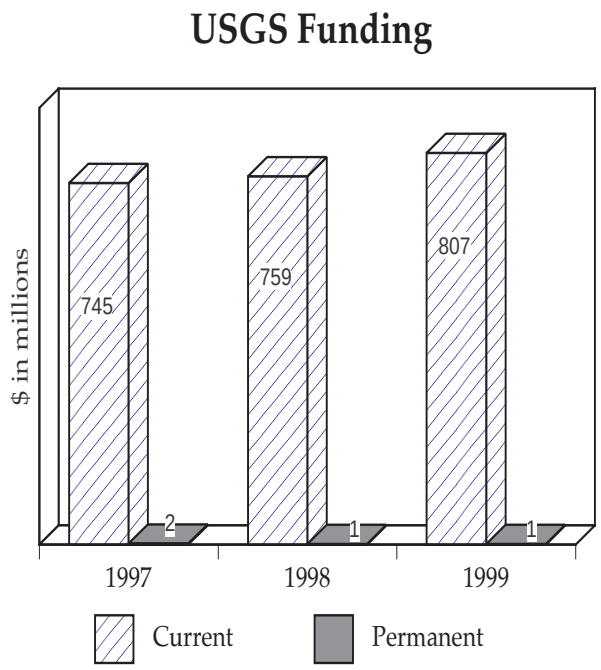
U.S. GEOLOGICAL SURVEY

Mission - In March of 1879, thirty years after the establishment of the Home Department, President Rutherford B. Hayes signed a bill appropriating money for "sundry civil expenses of the Federal Government for the fiscal year beginning July 1, 1879." The bill included a section that established a new agency, the United States Geological Survey (USGS), placing it in the Department of the Interior. The nascent agency's organic act called for the "classification of public lands, and the examination of the geological structure, mineral resources, and products of the National domain." To accomplish this task, Congress appropriated $100,000.

In the following 119 years, USGS has focused its programs to respond to the Nation's need for unbiased scientific information that is readily available to the public and private sectors to assist them in meeting their land and resource management responsibilities. The USGS is the Nation's primary provider of earth and biological science information related to natural hazards; aspects of the environment; and energy, mineral and biological resources. It is the Federal Government's principal civilian mapping agency and a primary source of data on the quality and quantity of the Nation's water resources. The information produced by USGS helps others manage, develop and protect America's resources.

The USGS supplies the scientific information needed to make sound decisions to minimize or mitigate the effects of natural and human-induced hazards. As it forges ahead into its second century of service to the American public, USGS continues to foster the work of dedicated scientists to provide unbiased information and knowledge for the Nation. With its global reputation, USGS accepts the need for continuing change to meet the scientific needs of a complex world and vigorously plan for it in order to prevail as an internationally recognized natural science organization for generations to come.

Program Overview - With appropriations from Congress, USGS provides scientific information to Federal, State, and local land, resource and water managers. Over the years, USGS has adapted its programs to respond to emergency needs brought on by natural disasters and the changing priorities of its customers. The USGS work accomplished through direct appropriations is supplemented by leveraging more than $80 million per year in matching funds from State and local governments for mapping, water resource gaging and related studies. This is an affirmation of the importance of USGS research, data, and service to the American people.



Budget Request Overview - The 1999 budget request for USGS is $806.9 million, an increase of $47.7 million over the FY 1998 enacted level. The request contains increases to improve the use of USGS expertise in responding to science information needs within the Department and for other Federal, State and local agencies. Program increases include: $15.0 million for the disaster information network; $2.5 million for the EROS Data Center's archiving capacity; $16.5 million for the Clean Water and Watershed Restoration initiative; $11.0 million for species and habitat research; and $7.0 million for increased public access to water quality information.

The increases requested by USGS are partially offset by program decreases including: expected savings from REGO II initiatives (-$7.1 million); -$3.0 million in the mapping program; -$3.5 million in coastal and marine geology; -$1.7 million in national cooperative geologic mapping; -$3.0 million in the minerals and energy programs; -$1.2 million in water resources investigations; -$2.3 million in biological research; and -$1.1 million in facility management.

The water programs of USGS have often been called on to respond to current issues related to water quality and quantity in the United States. In October 1997, the Vice President published a memorandum announcing a Clean Water Initiative. In it, he called on the Secretary of Agriculture and the Administrator of the Environmental Protection Agency, along with other agencies, to develop a comprehensive action plan that builds on the clean water successes over the past five years and addresses major goals: enhanced protection from public health threats posed by water pollution; more effective control of polluted runoff; and promotion of water quality protection on a watershed basis. The memorandum specifically calls on the Department of the Interior to take a lead role in several areas of the plan's development related to preventing contamination and ensuring community-based watershed management. The increase of $16.5 million requested in the USGS budget in support of the plan will address pollution control issues on Federal lands, investigate non-point source pollution, characterize contaminants in Western reservoirs, and make data available on the Internet in a consistent, objective, and scientifically defensible form. The Clean Water and Watershed Restoration initiative is explained in more detail in the Departmental Highlights section of the *Budget in Brief*.

Also included in the USGS request is an increase of $7.0 million to expand ongoing work to address the quality of drinking water in the Nation's 86 largest cities. The results of this research will be linked to EPA's "Environmental Monitoring for Public Access and Community Tracking" initiative.

In 1999, USGS requests an increase of $11.0 million as part of an Administration initiative to understand habitat and species relationships and to assist land managers in improving species' success to thrive in their natural habitat. The $11.0 million increase will fund research needed to develop information, decision support systems, and other tools for DOI managers responsible for species and habitat conservation. Efforts will be focused on landscape scale science, restoration techniques, and monitoring and assessment in support of adaptive resource management. Geographic areas will be targeted that have unique habitat characteristics that are at risk due to habitat loss or degradation. For example, research will develop scientific understanding of the biological, chemical, physical, and historical factors leading to the avian and fish mortality in the Salton Sea. In Arizona and New Mexico, the focus will be on effects of grazing and forest practices on endangered species and migratory birds; research will be conducted to determine the consequences of reintroducing fire as a tool to improve ecosystem health on National Wildlife Refuges; monitoring and assessment in wetlands and uplands will support implementation of the North American Waterfowl Management Plan; and functional grassland habitat will be identified and evaluated for identification of corridors of grassland ecosystems that will support migratory songbirds.

The USGS will continue its support of research in fragile areas of special concern. In South Florida, USGS provides information and model components that will refine the ability to forecast the effects of various management strategies on water levels and plant and animal communities. The USGS data on species ecology, elevation, water flow, paleohistory, geochemistry and evapotranspiration, and other information will improve the accuracy and the predictive capabilities of the models developed for future land and water management practices.

In the mapping and information dissemination area, the USGS budget includes requests for two increases: $2.5 million to build the archival capacity at the EROS Data Center and $15.0 million to establish a disaster information network.

The Secretary of the Interior has delegated to USGS his responsibility to manage the National Satellite Land Remote Sensing Data Archive, as mandated by the Land Remote Sensing Policy Act of 1992 and the National Space Policy of 1996. The USGS maintains this archive of remotely sensed data by providing proper storage, preservation, and timely access to data for long-term monitoring and global environmental studies. Archive holdings now include all the Nation's civil satellite land remote sensing data as well as 880,000 frames of recently declassified satellite imagery. In 1998, three new remote sensing instruments (MODIS, ASTER and Landsat 7) will be launched and will begin to provide unprecedented amounts of data that USGS is at present, unable to accept. The requested increase will begin to provide the systems and infrastructure capacity to ensure the availability and avoid permanent loss of these data. To put the anticipated volume of data in perspective, from

1972 through 1997 USGS acquired and archived 132,000 gigabytes of data. By 1999, USGS will acquire and archive an additional 550,000 gigabytes — nearly a five-fold increase over the total volume archived during the first 25 years of satellite data acquisition. Federal and State agencies, academia, private industry, and the general public have high expectations for the quantity and quality of available data from the USGS National Satellite Data Archive. The funding increase will ensure that these expectations can begin to be met.

The Vice President requested that key Federal departments "discuss the feasibility of establishing a disaster information network." Disaster information must be integrated with user needs to improve the response, recovery, mitigation, and preparedness of the Nation in the face of potential natural disasters that occur on a large scale. A multi-agency task force concluded that the excessive monetary losses from natural disasters in the United States (estimated to average $1 billion per week) could be reduced effectively by integrating disaster information from all sources, including classified sources, and making it available to emergency managers and others who could take action to reduce disaster losses. The $15.0 million increase would support the integration of disaster-relevant information and its dissemination over robust computer and broadcast networks to ensure access during all phases of disaster management. Efforts to achieve these results include adapting appropriate technologies, supporting some research and development for disseminating disaster information, and integrating data from appropriate agencies and stakeholders. The USGS will host a new multi-agency integrated program office, comprised of representatives from appropriate agencies, that will develop policy and work to integrate information and coordinate Federal activities. A public/private partnership will be established to include in the development of this information system those who manage or are affected by disasters. Efforts to establish a disaster information network align with existing USGS mission areas, such as management and delivery of natural science information, civil applications of classified data, prototype disaster warning systems, and hazards monitoring and research efforts.

GPRA Status - The current GPRA Strategic Plan reflects the comments and suggestions provided by the Department of the Interior, the Office of Management and Budget, and the Congress. Comments from other stakeholders have also been accommodated within the policy framework established by the Administration regarding the future direction of USGS programs. The USGS developed an annual performance plan for 1999 based on the GPRA Strategic Plan and integrated it with the budget structure. In 1998, USGS will develop baseline data and tracking and reporting mechanisms to ensure that timely and accurate performance information is available to USGS customers. The USGS views the development of performance measures as a “work in progress” and will continue to refine its performance measurement criteria, baseline data collection, and tracking efforts.

SUMMARY OF BUREAU APPROPRIATIONS
(all dollar amounts in thousands)

Comparison of 1999 Request with 1998 Enacted:

	1998 Enacted		1999 Request		Change From 1998	
	FTE	Amount	FTE	Amount	FTE	Amount
Appropriations						
Surveys, Investigations, & Research	6,487	759,160	6,487	806,883	0	+47,723
Permanents, Trust Funds, & Others						
Operations & Maintenance of Quarters (USGS)	0	28	0	28	0	0
Contributed Funds (USGS)	0	420	0	0	0	-420
Working Capital Fund	294	0	294	0	0	0
Operations & Maintenance of Quarters (BR)	0	64	0	64	0	0
Donations & Contributed Funds (BR)	0	250	0	250	0	0
Subtotal, Permanents, Trust Funds, & Others	294	762	294	342	0	-420
Transfers & Reimbursables	2,993	0	2,993	0	0	0
TOTAL, U. S. GEOLOGICAL SURVEY	**9,774**	**759,922**	**9,774**	**807,225**	**0**	**+47,303**

HIGHLIGHTS OF BUDGET CHANGES
By Appropriation Activity/Subactivity

APPROPRIATION: Surveys, Investigations, and Research

	1997 Actual	1998 Enacted	1999 Request	Change from 1998 Enacted
National Mapping Program				
Mapping Data Collect/Integration	60,916	65,096	61,024	-4,072
Earth Science Info Mgmt/Delivery	32,711	33,146	51,568	+18,422
Geographic Research/Applications	38,148	37,543	39,197	+1,654
Subtotal, Mapping	131,775	135,785	151,789	+16,004
Geologic Hazards, Resource & Processes				
Geologic Hazards Assessments	70,303	75,032	76,435	+1,403
Geologic Landscape/Coastal Assess	75,089	72,986	71,216	-1,770
Geologic Resource Assessments	83,888	87,157	86,142	-1,015
Subtotal, Geologic Hazards	229,280	235,175	233,793	-1,382
Water Resources Investigations				
Water Resources Assessment/Rsch	94,444	95,851	103,820	+7,969
Water Data Collection/Mgmt	28,950	28,247	32,849	+4,602
Federal/State Coop Water Program	64,559	66,231	71,961	+5,730
Water Resources Rsch Act Program	4,553	4,553	5,557	+1,004
Subtotal, Water Resources	192,506	194,882	214,187	+19,305
Biological Research				
Biological Research/Monitoring	116,680	122,815	135,314	+12,499
Biological Info Mgmt/Delivery	10,890	11,145	11,472	+327
Cooperative Research Units	9,930	11,199	11,526	+327
Subtotal, Biological Research	137,500	145,159	158,312	+13,153
General Administration	25,057	25,584	27,293	+1,709
Facilities	22,795	22,575	21,509	-1,066
Emergency Supplementals;				
Flood Damage	5,788			
TOTAL APPROPRIATION	744,701	759,160	806,883	+47,723

	Amount
Uncontrollable Cost Net Increase (non-add)	[+17,495]

National Mapping Program

Mapping Data Collection and Integration -4,072

The decrease (-$3,000) eliminates 1998 funding for a pilot project in Ohio that initiated the development of a system for near-real-time delivery of natural science data. The decrease (-$1,921) achieves REGO II savings from technological and process improvements through the application of new hardware, software, and procedures. This decrease will allow for redirection of funds to higher priorities. There is also a net increase (+$849) for uncontrollable costs.

Earth Science Information Management & Delivery +18,422

The proposed increase ($15,000) will support a multiagency effort to establish a robust, integrated, virtual disaster information network for cooperative exchange of timely, relevant information that can be used during all phases of disaster management to save lives and reduce economic losses. Funds will be used to improve the organization of disaster information, teamwork among organizations, reliability of Federal intranets during disasters, and standardization of data sets, data access, and data analysis tools.

An increase (+$2,500) is proposed for the EROS Data Center's archiving capacity. In 1998, three new remote sensing instruments (Landsat 7, MODIS, and ASTER) will begin to provide unprecedented amounts of data that the USGS archive is currently unable to accept due to size and technological constraints. The increase begins to provide funding for the required systems and infrastructure capacity to ensure the availability and avoid permanent loss of these data. This increase also ensures that Federal and State agency, academia, private companies, and general public expectations , as well as Congressional intent under the Land Remote Sensing Policy Act, can begin to be met. There is also a net increase (+$922) for uncontrollable costs.

Geographic Research & Applications +1,654

The proposed increase (+$1,000) will enable the USGS to make additional geospatial data available on the Internet and to augment ongoing work to develop modeling and decision-support for understanding and managing non-point source pollutant impacts on watersheds. Expanded data base and information capability will assist State agencies responsible for Clean Water Act reporting by providing nationally consistent, scientifically defensible data in addition to local information. There is also a net increase (+$654) for uncontrollable costs.

Geologic Hazards, Resources, & Processes
Geologic Landscape & Coastal Assessments
Earth Surface Dynamics +2,274

The proposed increase (+$2,000) will fund interdisciplinary science for habitat restoration and species conservation tailored to the specific management needs of selected ecosystems (Salton Sea, Platte River, Greater Yellowstone, and Mojave Desert). The USGS will conduct research, develop databases, models and decision support systems of factors such as the impacts of water quality, vegetation, and contaminants on species and habitat. USGS research and assessment efforts will not only help Federal land managers make informed decisions regarding adaptive management, conservation planning, and selection of effective restoration strategies to resolve or prevent complex species and habitat problems, but will also provide the ultimate feedback mechanism to determine the success of resource policy and management. There is also a net increase (+$274) for uncontrollable costs.

National Cooperative Geologic Mapping -1,229

The proposed decrease (-$1,726) will allow for redirection of funds for higher priority programs. This decrease will be distributed among the components of the program, consistent with provisions of the National Cooperative Geologic Mapping act (Public Law 105-36), which was recently re-authorized by Congress. As specified by the Act, the reductions would be as follows:

	Amount
Federal Geologic Mapping and Geologic Mapping Support (FEDMAP/SUPPORTMAP): -$1,346; matching funds for geologic mapping by State geologic surveys: -$345; matching funds for geologic mapping by universities: -$35. There is also a net increase (+$497) for uncontrollable costs.	
Coastal and Marine Geology	-2,815
The proposed decrease (-$3,500) will result in discontinuing studies of coastal erosion in South Carolina after completion of the first phase in 1998. Similarly, coastal erosion studies in the Great Lakes will be confined to those investigations that USGS will have completed before 1999. Ongoing studies of beach replenishment and salt water intrusion in areas of coastal New York will be terminated. There is also a net increase (+$685) for uncontrollable costs.	
Geologic Resource Assessments	
Mineral Resources	-584
The proposed net decrease within the Minerals Resources Subactivity includes -$2,000 for the Alaska Mineral Information at Risk, curtailing cooperative efforts with other Federal and State agencies, academia, Alaska Native corporations, and industry to assure the long-term availability of minerals information. A decrease of -$3,000 associated with REGO II reductions scheduled for 1999 and 2000 will allow for the redirection of funds to higher priorities. A proposed increase for Clean Water and Watershed Restoration initiative (+$3,000) will enable the USGS to contribute to a rapid and cost-effective evaluation of non-point source water quality threats associated with abandoned mine lands. The USGS will accelerate production of digital state-scale geo-environmental maps for Idaho, Utah, Wyoming, New Mexico, Nevada, and Southern California to identify, rank, and characterize watersheds for remediation. There is also a net increase (+$1,416) for uncontrollable costs.	
Energy Resources	-431
The proposed decrease (-$1,000) will result in termination of coal availability and recoverability studies. The decrease will allow redirection of funds to higher priorities. There is also a net increase (+$569) for uncontrollable costs.	
Water Resources Investigations	
Water Resources Assessment and Research	
National Water-Quality Assessment	+7,387
In keeping with the NAWQA design, this $6.0 million initiative allows both operation of more study units and expansion of modeling activity as requested in National Academy of Science reviews. Expanded water-quality modeling capabilities will enable Federal, State, and local agencies to explore water-quality management options to restore 1,000 impaired watersheds. Of this funding, $1.0 million is specifically for work in NAWQA study areas that coincide with National Park Service lands. There is also a net increase (+$1,387) for uncontrollable costs.	
Toxic Substances Hydrology	-26
The proposed decrease (-$526) would result in the delay or cancellation of planned regional assessments of mercury contamination in an aquatic ecosystem. This reduction will allow redirection of funds to higher priorities. There is also a net increase (+$500) for uncontrollable costs.	
Water Data Collection & Management	
Hydrologic Networks & Analysis	+1,517
The proposed net increase in this subactivity includes REGO II decreases in the Truckee-Carson monitoring (-$1,219) project and watershed modeling studies(-$998). The USGS anticipates using a cost shared arrangement with the Bureau of Reclamation to complete modeling activities for the Truckee and Carson River basins and will take steps to ensure that the future modeling needs of DOI bureaus are met through other water resources programs. A funding reduction (-$496) will result in the downsizing of activities that are related to the development and testing of new instrumentation for water monitoring, and research on lower priority aspects of water resources data collection and analysis. These decreases will allow redirection of funds to higher priorities.	

Amount

The proposed increase of $3,500 comprises two elements: 1) work linked to the USEPA initiative "Environmental Monitoring for Public Access and Community Tracking," which will address the quality of drinking water in the Nation's 86 largest cities (+$2,000); and 2) work linked to the Clean Water and Watershed Restoration initiative, which will address water quality issues in 1,000 impaired watersheds across the country (+$1,500). The $2,000 will provide funds to: 1) increase the collection and availability of water quality information, including real-time data, for rivers and coastal waters near 86 of the Nation's largest cities; and 2) modernize sampling and measurement equipment to improve the cost-effectiveness and timeliness of water quality data. The $1,500 will provide water quality monitoring and assessment support for National Park Service watersheds which are outside of the study areas covered by the NAWQA program, and will provide technical assistance on other water quality issues. There is also a net increase (+$730) for uncontrollable costs.

Water Information Delivery +3,085

The proposed increase (+$3,000) for the delivery of water quality information is linked with the USEPA initiative referenced above and will: 1) modernize USGS data-management and dissemination software to enhance access to all USGS water quality data for other agencies, watershed councils, and the public; and 2) work with States, tribes, city governments, and water supply agencies to improve public understanding of issues related to the protection of drinking water sources and protection of recreational waters. There is also a net increase (+$85) for uncontrollable costs.

Fed-State Coop Water Program +5,730

The proposed increase of $4,000 comprises two elements: 1) work linked to the USEPA initiative "Environmental Monitoring for Public Access and Community Tracking" which will address the quality of drinking water in the Nation's 86 largest cities (+$2,000); and 2) work linked to the Clean Water and Watershed Restoration initiative, which will address water quality issues in 1,000 impaired watersheds across the country (+$2,000). The increase (+$2,000) for water quality information also will involve the States and will focus on 1) improving the availability and dissemination of water quality data, including real-time data, for rivers and coastal waters near 86 of the Nation's largest cities; and 2)working with cities to improve information about drinking-water source areas and approaches to protecting their water supplies. The proposed funding increase (+$2,000) for the Clean Water and Watershed Restoration initiative will provide the resources for cooperating with States to 1) determine the linkage between agricultural practices and pesticides in ground water; 2) provide a more quantitative understanding of the sources of nutrients entering a stream; 3)determine the continuing effects of past land use; and 4) understand the relationships between water quality and the health of aquatic organisms. Program dollars in the Federal/State Cooperative subactivity are matched 1:1 by the States. There is also a net increase (+$1,730) for uncontrollable costs.

Water Resources Research Act +1,004

Universities will be engaged through a competitive grants program in focused research to investigate the processes affecting non-point source pollution in support of the Clean Water and Watershed Restoration initiative. There is also a net increase (+$4) for uncontrollable costs.

Biological Research

Biological Research & Monitoring +12,499

The proposed decrease ($-1,370) will be taken across all biological programs effecting the ability of USGS to deliver information to DOI resource managers. This reduction, taken throughout the program, is viewed as a viable alternative to provide the flexibility to address other high-priority needs such as responding to the issues of immediate management concern of DOI bureaus. The proposed reduction (-$899) will eliminate the Federal share of funding for the chemical and drug registration partnership and reduce the State partnership program.

USGS proposes an increase of $9 million to develop information, decision support systems and other tools for DOI managers responsible for species and habitat conservation. Efforts will be focused on landscape scale science, restoration techniques, and monitoring and assessment in support of adaptive resource management. Geographic areas will be targeted that have unique habitat characteristics that are at risk due to habitat loss or degradation such as Salton Sea. In

	Amount
Arizona and New Mexico, the focus will be on the effects of grazing and forest practices on endangered species and migratory birds; research will be conducted to determine the consequences of reintroducing fire as a tool to improve ecosystem health on National Wildlife Refuges. The proposed increase (+$2,000) for the Clean Water Initiative will extend efforts in assessing reservoirs and streams in 20 high priority watersheds, providing Bureau of Reclamation managers information to improve facilities management to benefit water quality and biological resources. USGS will study selected coastal estuaries to determine the influence of land-use practices and pollution sources on ecosystem integrity and to determine the capacity of estuarine systems to withstand non-point source pollution input. The studies will use GIS to determine landscape characteristics and on-site sampling to evaluate nutrient loads and pollutant inputs. Investigations on mining impact will provide information necessary to identify effected watersheds and determine the degree of remediation necessary. There is also a net increase (+$2,768) for uncontrollable costs.	
Facilities	-1,066
A decrease of -$1,117 will reduce funds available for rental payments to GSA. The decrease will be borne by USGS programs. The activity also reflects a net increase (+$51) for uncontrollable costs.	